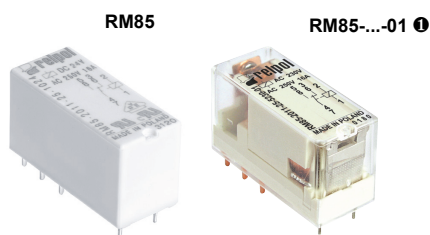







RM85

miniature relays



- Cadmium - free contacts • Height 15,7 mm
- 5000 V / 10 mm reinforced insulation
- For PCB and plug-in sockets
- Accessories: sockets and modules • AC and DC coils
- Available special versions: with transparent cover ❶; with the increased dielectric strength of the contact clearance ❷
- Compliance with standard PN-EN 60335-1
- Recognitions, certifications, directives: RoHS,     

Contact data

Number and type of contacts		1 CO, 1 NO ❷
Contact material		AgNi , AgNi/Au 5 µm, AgSnO ₂
Rated / max. switching voltage	AC	250 V / 440 V
Min. switching voltage		5 V AgNi, 5 V AgNi/Au 5 µm, 10 V AgSnO ₂
Rated load (capacity)	AC1	16 A / 250 V AC
	AC15	3 A / 120 V 1,5 A / 240 V (B300)
	AC3	750 W (single-phase motor)
	DC1	16 A / 24 V DC (see Fig. 3)
	DC13	0,22 A / 120 V 0,1 A / 250 V (R300)
Min. switching current		5 mA AgNi, 2 mA AgNi/Au 5 µm, 10 mA AgSnO ₂
Max. inrush current		30 A AgSnO ₂
Rated current		16 A
Max. breaking capacity	AC1	4 000 VA
Min. breaking capacity		0,3 W AgNi, 0,05 W AgNi/Au 5 µm, 1 W AgSnO ₂
Contact resistance		≤ 100 mΩ
Max. operating frequency	• at rated load	AC1 600 cycles/hour
	• no load	72 000 cycles/hour

Coil data

Rated voltage	50/60 Hz AC	12 ... 240 V
	DC	3 ... 110 V
Must release voltage		AC: ≥ 0,15 U _n DC: ≥ 0,1 U _n
Operating range of supply voltage		see Tables 1, 2 and Fig. 4, 5
Rated power consumption	AC	0,75 VA
	DC	0,4 ... 0,48 W

Insulation according to PN-EN 60664-1

Insulation rated voltage		400 V AC
Rated surge voltage		4 000 V 1,2 / 50 µs
Overvoltage category		III
Insulation pollution degree		3
Dielectric strength	• between coil and contacts	5 000 V AC
	• contact clearance	1 000 V AC
		2 000 V AC
		type of insulation: reinforced
		type of clearance: micro-disconnection
		contact 1 NO, type of clearance: full-disconnection ❷
Contact - coil distance	• clearance	≥ 10 mm
	• creepage	≥ 10 mm

General data

Operating / release time (typical values)		7 ms / 3 ms
Electrical life (number of cycles)	• resistive AC1	> 0,7 x 10 ⁵ 16 A, 250 V AC
		> 10 ⁴ 20 A, 250 V AC, 85 °C (RM85-3021-25-1...)
	• cosφ	see Fig. 2
	• DC L/R=40 ms	> 10 ⁵ 0,15 A, 220 V DC
Mechanical life (cycles)		> 3 x 10 ⁷
Dimensions (L x W x H) / Weight		29 x 12,7 x 15,7 mm / 14 g
Ambient temperature	• storage	-40...+85 °C
	• operating	AC: -40...+70 °C DC: -40...+85 °C -40...+70 °C ❶
Cover protection category		IP 40 ❶ or IP 67 PN-EN 60529
Environmental protection		RTII ❶ or RTIII PN-EN 116000-3
Shock resistance		30 g
Vibration resistance		10 g 10...150 Hz
Solder bath temperature / Soldering time		max. 270 °C / max. 5 s

The data in bold type pertain to the standard versions of the relays.

❶ For special version - relays in transparent cover: only available with IP 40 and RTII, operating temperature -40...+70 °C - see "Ordering codes"

❷ For special version with contact 1 NO: relays with increased contact gap, dielectric strength 2000 V AC - see "Ordering codes"

RM85

miniature relays

Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance at 20 °C Ω	Acceptable resistance	Coil operating range V DC	
				min. (at 20 °C)	max. (at 20 °C)
1003	3	22	$\pm 10\%$	2,1	7,6
1005	5	60	$\pm 10\%$	3,5	12,7
1006	6	90	$\pm 10\%$	4,2	15,3
1009	9	200	$\pm 10\%$	6,3	22,9
1012	12	360	$\pm 10\%$	8,4	30,6
1018	18	710	$\pm 10\%$	12,6	45,9
1024	24	1 440	$\pm 10\%$	16,8	61,2
1036	36	3 140	$\pm 10\%$	25,2	91,8
1048	48	5 700	$\pm 10\%$	33,6	122,4
1060	60	7 500	$\pm 10\%$	42,0	153,0
1110	110	25 200	$\pm 10\%$	77,0	280,0

The data in bold type pertain to the standard versions of the relays.

Coil data - AC 50/60 Hz voltage version

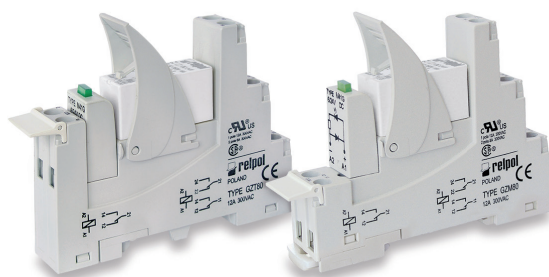
Table 2

Coil code	Rated voltage V AC	Coil resistance at 20 °C Ω	Acceptable resistance	Coil operating range V AC 50 Hz	
				min. (at 20 °C)	max. (at 20 °C)
5012	12	100	$\pm 10\%$	9,6	13,2
5024	24	400	$\pm 10\%$	19,2	28,8
5048	48	1 550	$\pm 10\%$	38,4	57,6
5060	60	2 600	$\pm 10\%$	48,0	72,0
5110	110	8 900	$\pm 10\%$	88,0	132,0
5115	115	9 600	$\pm 10\%$	92,0	138,0
5120	120	10 200	$\pm 10\%$	96,0	144,0
5220	220	35 500	$\pm 10\%$	176,0	264,0
5230	230	38 500	$\pm 10\%$	184,0	276,0
5240	240	42 500	$\pm 15\%$	192,0	288,0

The data in bold type pertain to the standard versions of the relays.

PI84 (PI85)

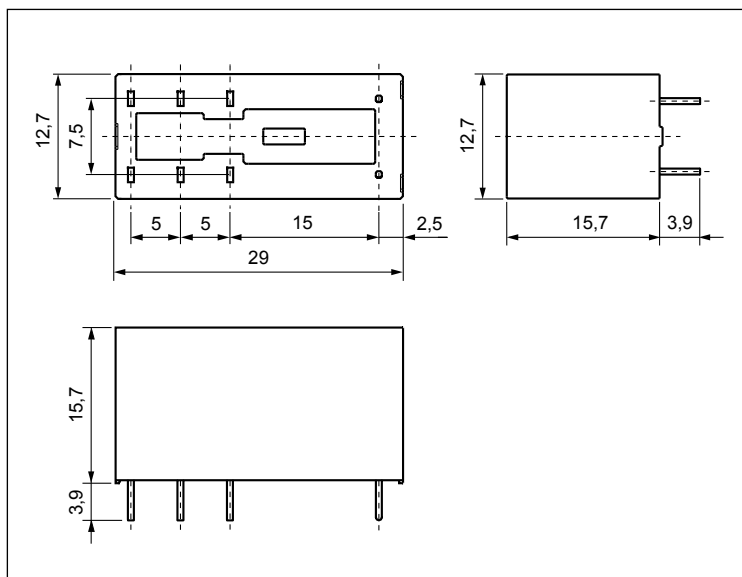
Interface relay:
relay RM84 (RM85)
and socket
GZT80 or GZM80
- see www.repol.com.pl



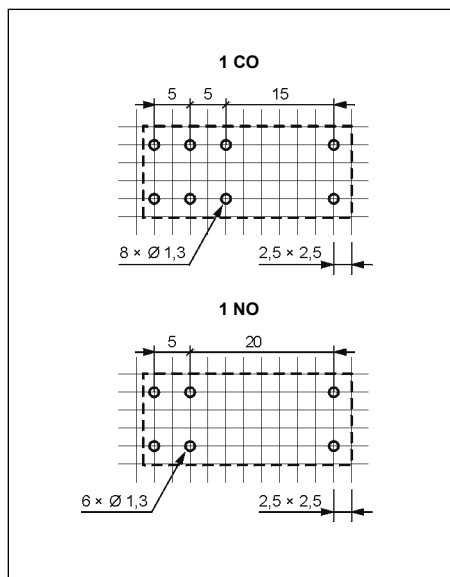
RM85

miniature relays

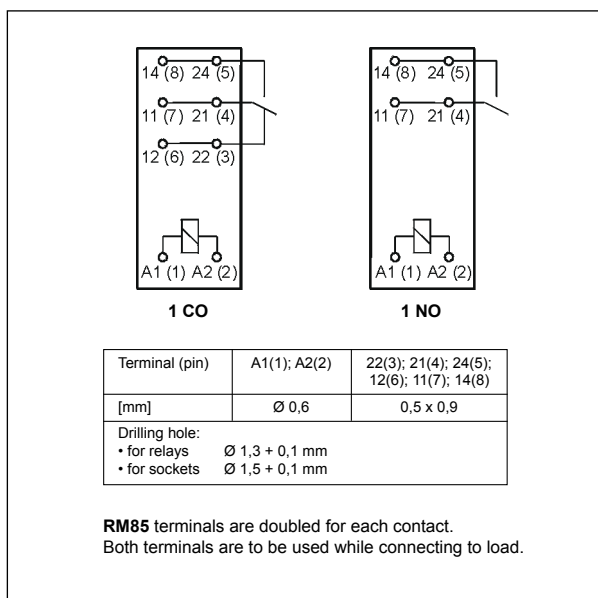
Dimensions



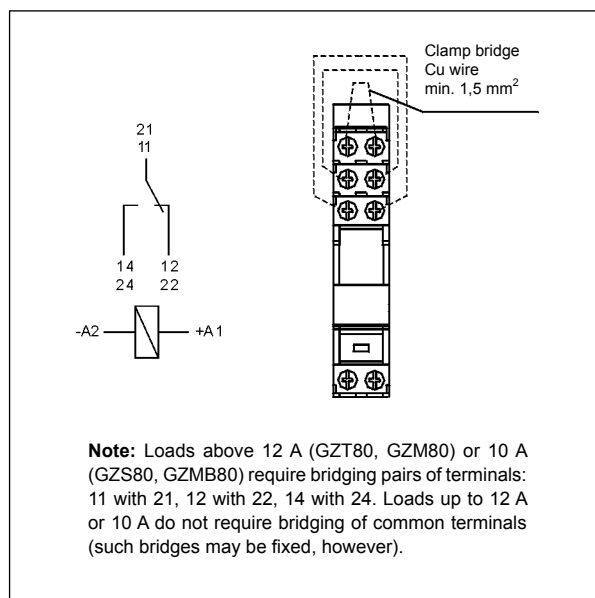
Pinout (solder side view)



Connection diagrams (pin side view)

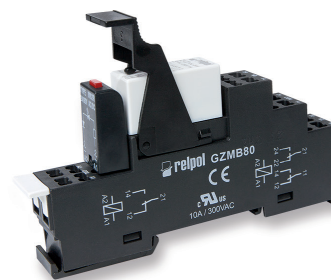


Connection of GZ... sockets



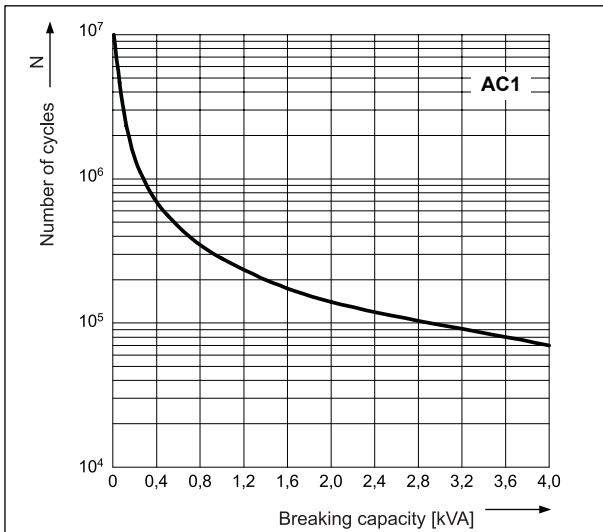
GZMB80

Spring terminals
plug-in socket
for RM84, RM85...,
RMB841, RMB851,
RM87L, RM87P
- see page 7.



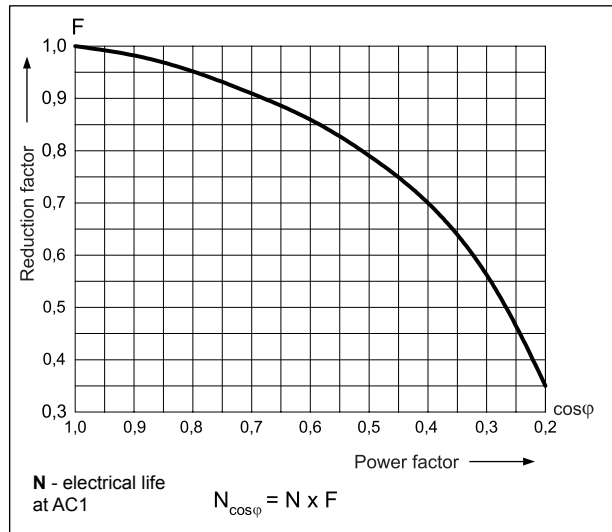
Electrical life at AC resistive load.
Switching frequency: 600 cycles/hour

Fig. 1



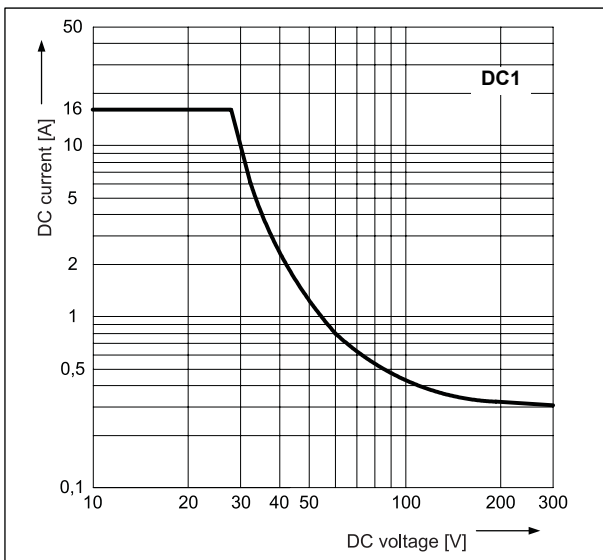
Electrical life reduction factor at AC inductive load

Fig. 2



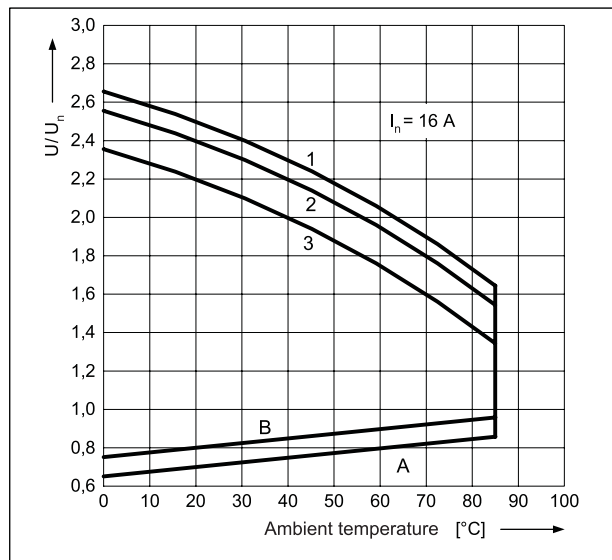
Max. DC resistive load breaking capacity

Fig. 3



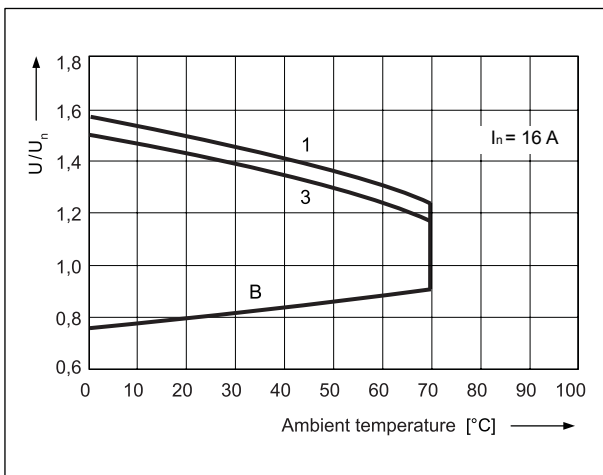
Coil operating range - DC

Fig. 4



Coil operating range - AC 50 Hz

Fig. 5



Description of Fig. 4 and 5

A - relations between make voltage and ambient temperature at no load on contacts. Coil temperature and ambient temperature are equal before coil energizing. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).

B - relations between make voltage and ambient temperature after initial coil heating up with $1,1 U_n$, at continues load of I_n on contacts. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).

1, 2, 3 - values on Y axis represent allowed overvoltage on coil at certain ambient temperature and contact load:

- 1 - no load
- 2 - 50% of rated load
- 3 - rated load

RM85

miniature relays

Mounting

Relays **RM85** ⑤ are designed for: • direct PCB mounting • screw terminals plug-in sockets **GZT80** ④ ⑥ and **GZM80** ④ ⑥ with clip **GZT80-0040** or **GZM80-0041**; plug-in sockets **GZS80** ④ ⑥ with clip **GZS-0040** or **GZM80-0041**, 35 mm rail mount acc. to PN-EN 60715 or on panel mounting with one M3 screw • spring terminals plug-in sockets **GZMB80** ④ ⑥ with clip **GZMB80-0040** or **GZM80-0041**, 35 mm rail mount acc. to P-EN 60715. Signalling / protecting modules **type M...** are available with sockets (see page 9) • plug-in sockets for PCB mounting **EC 50** with clip **MP16-2**, MH16-2; plug-in sockets **PW80** with clip **MH16-2**; plug-in sockets **GD50** with clip **MP16-2**, GD-0016, MH16-2.

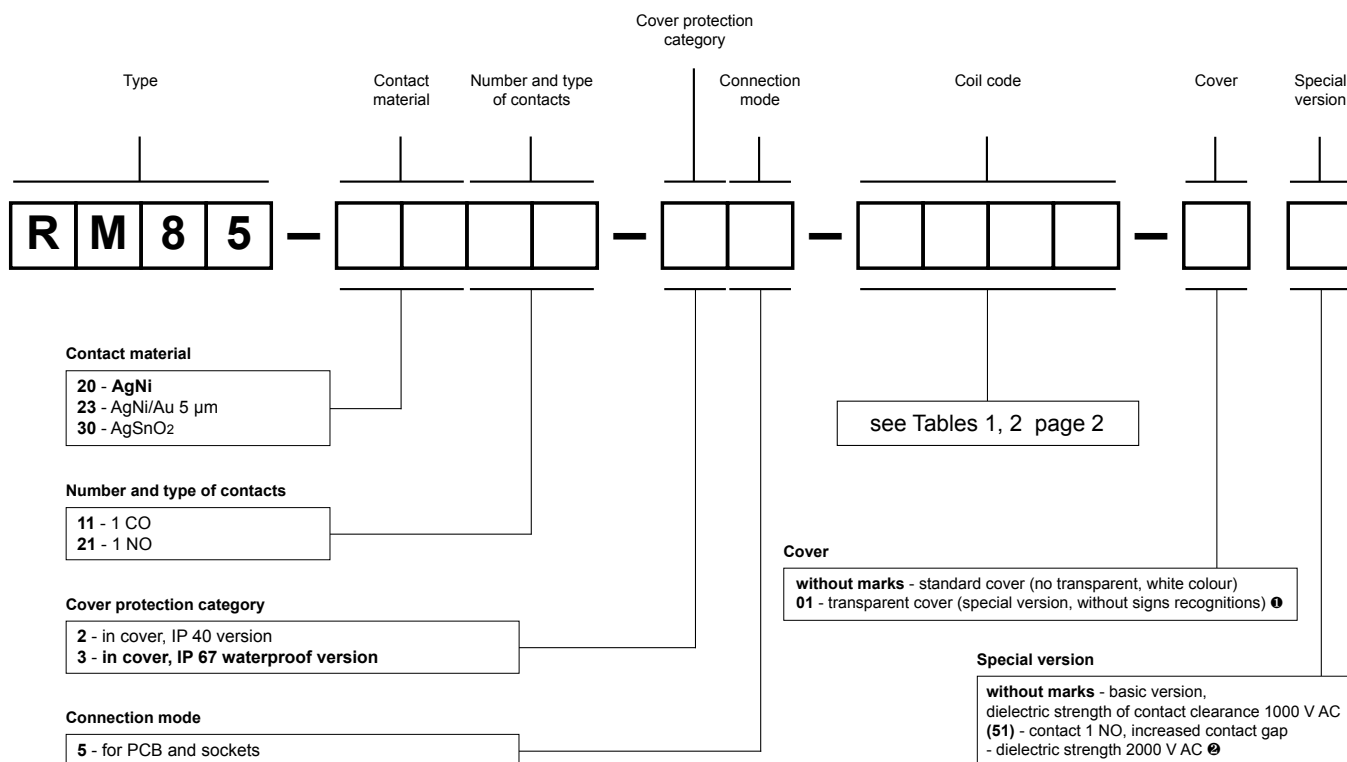
⑤ For special version - relays in transparent cover: the distance of min. 5 mm between the mounting relays.

④ Loads above 12 A (GZT80, GZM80) or 10 A (GZS80, GZMB80) require bridging pairs of terminals: 11 with 21, 12 with 22, 14 with 24 - see page 3.

⑥ Plug-in sockets **GZT80**, **GZM80**, **GZS80** may be linked with interconnection strip type **ZGGZ80** (see page 10).

④ For sockets **GZMB80** - see page 7 (wire connection).

Ordering codes



① For special version - relays in transparent cover: only available with IP 40 and RTII, operating temperature -40...+70 °C

② For special version with contact 1 NO: relays with increased contact gap, dielectric strength 2000 V AC

Examples of ordering code:

RM85-3011-25-5024

relay **RM85**, for PCB and sockets, one changeover contact, contact material AgSnO₂, coil voltage 24 V AC 50/60 Hz, in standard cover (no transparent, white colour) IP 40

RM85-2011-25-1012-01

relay **RM85**, for PCB and sockets, one changeover contact, contact material AgNi, coil voltage 12 V DC, in transparent cover (special version, without signs recognitions) IP 40

RM85-2321-35-1024 (51)

relay **RM85**, special version with increased contact gap, for PCB and sockets, one normally open contact, contact material AgNi/Au 5 µm, coil voltage 24 V DC, in standard cover (no transparent, white colour) IP 67